

CLAIMS

1. A content-providing server for executing content transmission to a client and content recording processing,  
5 said server comprising:
  - a tuner for executing data reception processing;
  - a data transmission/reception unit for executing communication processing between server and client of received content from said tuner and of control information;
- 10 a metadata storage unit wherein attribute information corresponding to received content is stored as content information;
- a content storage unit for storing content;
- a content management unit for executing providing  
15 processing as to a client of said content information; and
- a content delivery control unit for executing processing as to received content via said tuner;
- 20 said content delivery control unit comprising a tuner control instance for executing delivery processing control as to the client of the received content of said tuner, and wherein a recording source content identifier is set corresponding to the tuner-received content, and
- 25 a storage unit control instance for executing storage processing control as to said content storage unit of the

received content by said tuner, and wherein a recording target content identifier is set;

wherein each of said tuner control instance and said storage unit control instance independently executes control  
5 corresponding to the set content identifiers.

2. The content-providing server according to Claim 1,  
wherein a recording source content identifier is set in said storage unit control instance;

10 and wherein said storage unit control instance is configured so as to execute specific processing of the recording content based on said recording source content identifier.

15 3. The content-providing server according to Claim 1,  
wherein said content management unit is configured so as to execute content information management based on a content management directory;

20 and is configured so as to set said recording source content identifier as the metadata of the tuner container as an management object of said content management directory,  
and to set said recording target content identifier as the metadata of a content storage object as an management object of said content management directory, and also to execute  
25 the providing processing of said metadata according to a

request from said client; and

and wherein each of said tuner control instance and  
said storage unit control instance execute setting  
processing of said recording source content identifier or  
5 recording target content identifier, according to a request  
from said client.

4. The content-providing server according to Claim 1,  
wherein said recording source content identifier is a  
10 channel list identifier as identifying information of a  
channel list including at least multiple channels within the  
receiving channels of said tuner;

and wherein said tuner control instance is configured  
so as to set multiple content to be received by the tuner,  
15 corresponding to multiple channels described in said channel  
list, as one unit of the control content, and executes  
control of the delivery content corresponding to the  
multiple channels described in said channel list, based on a  
control request corresponding to the channel list identifier  
20 to be received from a client.

5. The content-providing server according to Claim 1,  
wherein said recording source content identifier is a  
channel list URL (Uniform Resource Locator) which is set as  
25 identifying information of a channel list including at least

multiple channels within the receiving channels of said tuner;

and wherein said recording source content identifier is a content storage object URL which is set as an identifier.

5 of a content storage object corresponding to a content storage region which is set in said content storage unit.

6. The content-providing server according to Claim 1, wherein said content management unit is configured so as to 10 execute content information management based on the content management directory,

and is configured so as to be capable of retaining at least one of the setting information of content recording ending time information and recording quality, as the 15 metadata of the content storage object as the management object of said content management directory; and

the storage unit control instance wherein said recording target content identifier is set is configured so as to execute the content recording processing according to 20 said setting information.

7. The content-providing server according to Claim 1, wherein said content management unit is configured so as to execute processing for setting a content storage object URL 25 as the metadata as to the generating object, under the

condition that information showing that a generating request for the content storage object for storing live content is included in the generating request of the content storage object from said client.

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8. The content-providing server according to Claim 1, wherein said content-providing server is configured so as to execute setting processing for said storage unit control instance, under the condition that information showing that 10 a generating request for the content storage object for storing live content is included in the generating request of the content storage object from said client.

9. The content-providing server according to Claim 8, 15 wherein the setting processing of said recording unit control instance includes setting process of the content storage object URL as a recording target content identifier.

10. The content-providing server according to Claim 1, 20 wherein protocol information corresponding to the content is included in said content information;

and wherein a function ID is set in the protocol information, which is set corresponding to said recording source content, as tuner identifying information;

25 and wherein a function ID is set in the protocol

information, which is set corresponding to said recording target content, as content storage unit identifying information;

and wherein said content delivery control unit is  
5 configured so as to execute setting processing as a control instance that executes control for control objects wherein each of said tuner control instance and said storage unit control instance is determined based on said function ID.

10 11. The content-providing server according to Claim 1, wherein said content delivery control unit is configured so as to set a control instance which executes processing control for content specified by the content identifier, and to execute the control for each content based on the control  
15 instance;

and is of a configuration to execute connection management based on a connection management table corresponding to an instance ID which is an identifier for each of said tuner control instance and said storage unit  
20 control instance, a connection ID which is a connection identifier between the server and client, and protocol information corresponding to the delivery content.

12. The content-providing server according to Claim 1,  
25 wherein said content delivery control unit is configured so

as to receive a control request for delivery content according to a SOAP (Simple Object Access Control) protocol from a client, and execute content control based on the control request.

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13. An information processing device as a client which requests data processing of tuner-received content as to a server, wherein said information processing device sends, to said server, first protocol information including a tuner identifying function ID as the tuner identifying information and second protocol information including a data storage unit identifying function ID as the data storage unit identifying information, within the protocol information to be included in the content information received from said server;

and is configured so as to execute sending processing of a control request as to each control instance wherein the tuner control instance ID and the storage unit control instance ID to be received from said server is acquired, and said control instance ID is specified.

14. The information processing device according to Claim 13; wherein said information processing device is configured so as to perform setting requests of the recording source content identifier as to said tuner control instance, and of

the recording target content identifier as to said storage unit control instance, and also executes processing for notifying said recording source content identifier as to said storage unit control instance.

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15. The information processing device according to Claim 14, wherein said recording source content identifier is a channel list URL (Uniform Resource Locators) which is set as identifying information of a channel list including at least 10 multiple channels within the receiving channels of said tuner;

and wherein said recording target content identifier is a content storage object URL which is set as an identifier of a content storage object corresponding to a content 15 storage region which is set in said content storage unit.

16. An information processing method for executing processing of content received from a tuner, said method comprising:

20 a step for setting a recording source content identifier as to a tuner control instance which executes delivery processing control as to a client of the content received from said tuner;

25 a step for setting a recording target content identifier as to a storage unit control instance which

executes recording processing control as to said content storage unit of the content received from said tuner;  
a control request receiving step for receiving a control request which has identifying information of the 5 tuner control instance from the client or the storage unit control instance; and  
a control step for executing tuner control or storage unit control from the tuner control instance or the storage unit control instance, based on said identifying information.

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17. The information processing method according to Claim 16, further comprising:

a step for setting a recording source content identifier as to said recording unit control instance; 15 wherein said recording unit control instance executes specific processing of the recording content based on said recording source content identifier.

18. The information processing method according to Claim 20 16, further comprising:

a step for setting said recording source content identifier as the metadata of the tuner container as the management object of the content management directory;  
a step for setting said recording target content 25 identifier as the metadata of the content storage object as

the management object of said content management directory;

a step for executing the providing processing of said metadata according the request from said client; and,

5 with each of said tuner control instance and said recording unit control instance,

executing of setting processing of said recording source content identifier or recording target content identifier, according to the request from said client.

10 19. The information processing method according to Claim 16, wherein said recording source content identifier is a channel list identifier as identifying information of a channel list including at least multiple channels within the receiving channels of said tuner;

15 and wherein said tuner control instance sets multiple content to be received by the tuner, corresponding to multiple channels described in said channel list, as one unit of the control content, and executes control of the delivery content corresponding to the multiple channels 20 described in said channel list, based on a control request corresponding to the channel list identifier to be received from a client.

20. The information processing method according to Claim 25 16, wherein said recording source content identifier is a

channel list URL (Uniform Resource Locator) which is set as identifying information of a channel list including at least multiple channels within the receiving channels of said tuner;

5 and wherein said recording target content identifier is a content storage object URL which is set as an identifier of a content storage object corresponding to a content storage region which is set in said content storage unit.

10 21. The information processing method according to Claim 16, further comprising:

a step for setting at least one of the setting information of content recording ending time information and recording quality, as the metadata of the content storage 15 object as the management object of said content management directory; and

a step for executing the content recording processing according to said setting information with the storage unit control instance wherein said recording target content 20 identifier is set.

22. The information processing method according to Claim 16, further comprising:

a step for executing processing for setting a content 25 storage object URL as the metadata as to the generating

object, under the condition that information showing that a generating request for the content storage object for storing live content is included in the generating request of the content storage object from said client.

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23. The information processing method according to Claim 16, further comprising:

a step for executing setting processing for said storage unit control instance, under the condition that 10 information showing that a generating request for the content storage object for storing live content is included in the generating request of the content storage object from said client.

15 24. The information processing method according to Claim 23, wherein the setting processing of said storage unit control instance includes setting process of the content storage object URL as a recording target content identifier.

20 25. The information processing method according to Claim 16, wherein protocol information corresponding to the content is included in said content information;

and wherein a function ID is set in the protocol information, which is set corresponding to said recording 25 source content, as tuner identifying information;

and wherein a function ID is set in the protocol information, which is set corresponding to said recording target content, as content storage unit identifying information;

5 and wherein said information process method further executes setting processing as a control instance that executes control for control objects wherein each of said tuner control instance and said storage unit control instance is determined based on said function ID.

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26. The information processing method according to Claim 16, further comprising:

15 a step for setting a control instance which executes processing control for content specified by the content identifier, and for executing the control for each content based on the control instance;

20 wherein connection management is executed based on a connection management table corresponding to an instance ID which is an identifier for each of said tuner control instance and said storage unit control instance, a connection ID which is a connection identifier between the server and client, and protocol information corresponding to the delivery content.

25 27. The information processing method according to Claim

16, wherein said control request receiving step receives a control request for delivery content according to a SOAP (Simple Object Access Control) protocol from a client;

and wherein said control step is configured so as to 5 execute content control based on the control request received from the client.

28. An information processing method with a client which requests data processing of tuner-received content as to a 10 server, said method comprising:

a protocol information sending step for transmitting to said server, first protocol information including a tuner identifying function ID as the tuner identifying information and second protocol information including a data storage 15 unit identifying function ID as the data storage unit identifying information, within the protocol information included in the content information to be received from said server;

an ID acquiring step for acquiring a tuner control 20 instance ID and a storage unit control instance ID to be received from said server; and

a control request sending step for executing sending processing of a control request as to each control instance wherein a control instance ID is specified.

29. The information processing method according to Claim 28, further comprising:

5 a step for performing setting requests of the recording source content identifier as to said tuner control instance, and of the recording target content identifier as to said storage unit control instance, and also executing processing for notifying said recording source content identifier as to said storage unit control instance.

10 30. The information processing method according to Claim 29, wherein said recording source content identifier is a channel list URL (Uniform Resource Locator) which is set as identifying information of a channel list including at least multiple channels within the receiving channels of said 15 tuner;

and wherein said recording target content identifier is a content storage object URL which is set as an identifier of a content storage object corresponding to a content storage region which is set in said content storage unit.

20 31. A computer program for executing processing of content received from a tuner, said program comprising:  
a step for setting a recording source content identifier as to the tuner control instance which executes 25 delivery processing control as to the client of the content

received from said tuner;

a step for setting a recording target content identifier as to the storage unit control instance which executes the recording processing control as to said content

5 storage unit of the content received from said tuner;

a control request receiving step for receiving a control request which has identifying information of the tuner control instance or the storage unit control instance from the client; and

10 a control step for executing tuner control or storage unit control from the tuner control instance or the storage unit control instance, based on said identifying information.

32. A computer program with a client requesting data processing as to a server of content received from a tuner, said program comprising:

a protocol information sending step for sending to said server, first protocol information including a tuner identifying function ID as the tuner identifying information and second protocol information including a data storage unit identifying function ID as the data storage unit identifying information, within the protocol information included in the content information to be received from said server;

25 an ID acquiring step for acquiring a tuner control

instance ID and a storage unit control instance ID which is received from said server; and

5 a control request transmission step for executing transmission processing of the control request as to each control instance wherein the control instance ID is specified.